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ORIGINAL PAPER

# Normative Beliefs and Sexual Risk in China

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**Abstract** We examined normative beliefs about multiple sexual partners and social status in China and their association with risky sexual behaviors and sexually transmitted infections (STIs). Self-reported and biological markers of sexual risk were examined among 3,716 market vendors from a city in eastern China. Men who were older or with less education believed having multiple sexual partners was linked to higher social status. Adjusting for demographic characteristics, normative beliefs were significantly associated with having multiple sexual partners, while having multiple sexual partners was significantly associated with STIs. Normative beliefs regarding sexual behaviors may play an important role in individual risk behaviors. Future HIV/STI interventions must address community beliefs about the positive meaning of sexual risks, particularly among men with traditional beliefs about gender roles.

**Keywords** China · Normative beliefs · Sexually transmitted infection · Gender roles

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## Introduction

Sexually transmitted infections (STIs) were reportedly eliminated in China in 1964 through a series of comprehensive strategies [1, 2]. Since the 1980s, however, the prevalence of STI has increased dramatically [3–9]. The increasing number of people with multiple sexual partners has been regarded as a major risk factor for STI, including HIV transmission. Population modeling suggests that high levels of concurrent sexual partnering could increase the number of STI tenfold over 5 years [10]. National surveillance data has estimated that extramarital transmission accounted for 54.5% in 1995 and 71.0% in 1998 of STI infections [1], a rising rate over time.

The resurgence of STIs in China can be understood in the context of the economic and sexual revolutions that have taken place in China since the 1980s [11–14]. Pan [14] identified several factors related to the sexual revolution, including a weakened traditional view of sex for procreation and increased acceptance of sex for pleasure. Since the sexual revolution, traditional conceptions of linking love and marriage have been challenged and there has been a growing public acceptance of casual sex, multiple sexual partners, and even commercial sex [12, 14–16]. Concurrently, these sexual risk behaviors have increased. A nationwide survey of 20,000 men and women in China between 1989 and 1990 reported that 53% of the city residents and 43.9% of the villagers believed extramarital sex was understandable if there was a poor relationship with one's partner [17]. Recently, nearly 12% of migrants in Guangzhou, China, approved of extramarital sex [18]. About 10.7% of people had sex with people who were not their spouses, girlfriends, or boyfriends in the past 6 months and more than 5% admitted that they had multiple sexual partners in the past year [19]. The practice of

"keeping a second wife" (*Bao-er-nai*) or "hiring a mistress"—a man housing a mistress in a different location from his home—has become increasingly common in China, especially among the rich and powerful [20–23].

As more and more studies look beyond individual attitudes and behaviors in addressing sexual risk and HIV/STI prevention, community norms have increasingly emerged as predictors of risky acts [24–27]. In behavioral research, normative beliefs have been, and continue to be, an important psychosocial variable linked to individual health-related behaviors [28–32]. For example, Fishbein and colleagues [33, 34] provided evidence for the importance of subjective norms in predicting and determining condom use. It has also been used to predict behaviors and intentions related to cigarette, alcohol and marijuana use, and sexual behaviors [35–40].

Although there are studies examining associations between normative beliefs and sexual behaviors, only a few studies have linked them to social status and power. Social status has been reported to be a significant predictor of having multiple sexual partners in many countries [41, 42]. A recent report revealed that beliefs about gender equality were strongly predictive of multiple concurrent partnerships and HIV risk behaviors in South Africa [43]. Men frequently thought of extramarital relationships as arenas for the expression of economic and masculine status [44]. Likewise, for some Chinese men, keeping mistresses is considered a symbol of social and economic status [23, 45].

Nevertheless, to the best of our knowledge, there is no published study investigating normative beliefs regarding multiple sexual partners and their link to social status in China. Accordingly, the present study describes people's beliefs around having multiple sexual partners, its association with social status in China, and the relationships between normative beliefs and personal sexual behaviors as well as STIs. Understanding the relationships is important for the design and implementation of behavioral interventions for future HIV/STI control and prevention.

## Methods

### Site and Sample

This study is part of a National Institute of Mental Health Collaborative HIV/STD Prevention Trial that took place in five countries (China, India, Peru, Russia, and Zimbabwe) with populations at risk of contracting HIV and STIs. The rationale and methods of the study are described in detail elsewhere [46]. In China, the study was conducted from 2003 to 2006 among food market vendors in an eastern coastal city. The market selection procedure was based on the size and geographic location of the markets. Only markets with more than 100 vendors were selected. We selected markets with sufficient distance separation between each other to minimize contamination. Participants for this study were randomly recruited from 40 food markets out of approximately 150 food markets in the city, with a refusal rate of less than 8%. The market selection was based on the size and geographic location of the markets [47]. In order to be eligible for the study, potential participants had to be between 18 and 49 years of age. The study was approved by the Institutional Review Boards at the University of California, Los Angeles, and the Chinese Center for Disease Control and Prevention.

### Behavioral and Biological Data Collection

Data were collected in 2006 at the 24-month follow-up of the main trial, including behavioral and laboratory data. All eligible market vendors were requested to participate in the study after receiving a brief description of the purpose and procedure of the study. Informed consent was obtained from the prospective participants prior to data and specimen collection. All interviews were conducted using the computer-assisted personal interview to automatically incorporate skip patterns and reduce human errors. Information on socio-demographics, sexual risk behaviors, and beliefs about multiple sexual partners was included in the behavioral assessment.

After the interview, urine specimens and venous blood were collected from all participants and vaginal swabs were collected from female participants for STI/HIV testing. Trichomonas testing was performed on women only following the trial protocol. All initial tests were performed at the local hospital for sexually transmitted diseases and the STD laboratory at the National Center for STD and Leprosy Control in Nanjing, China. Quality control retests were performed by the Study Reference Lab at Johns Hopkins University. All participants were compensated 20 yuan (US$3) respectively for each assessment.

### Measurement

Participant demographic information such as age, gender, education level, marital status, and discretionary money were collected and used in this study. Age was computed by subtracting the reported year of birth from the assessment year. For marital status, responses were grouped into two categories (1 = married or living as married; 0 = never married/divorced/widowed); education level was also grouped in two categories (0 = no schooling or primary school; 1 = junior high school or higher). Respondent economic condition was measured by self-reported discretionary income per month. In addition to the basic

demographic information, three main outcome variables were measured and analyzed.

*Normative beliefs about multiple sexual partners measure* was defined as the extent to which respondents believe that having multiple sexual partners is a sign of social status. Normative beliefs about multiple sexual partners were measured using a five-item scale. Using 5-point Likert scales ranging from "*strongly disagree*" (scored as 1) to "*strongly agree*" (scored as 5), respondents were asked if they believed that people in their market (community) would agree or disagree with the following five statements: (1) "asking for 'girls' in an entertainment venue is a sign of high social status," (2) "having a 'second wife' is a sign of high social status for men," (3) "having multiple sexual partners is a sign of high social status for men," (4) "having a 'second husband' is a sign of high social status for women," and (5) "having multiple sexual partners is a sign of high social status for women." We constructed the normative beliefs scale by taking the sum of all five items (range of score: 5–25; Cronbach's alpha = 0.94), with a higher score indicating a higher level of normative belief about linking multiple sexual partners to higher social status.

*Risky sexual behavior* was measured by asking respondents about their number of sexual partners in the past 6 months. Respondents who reported more than one sexual partner in the past 6 months were considered as having multiple sexual partners. With regard to sensitive sexual activities, interviewers made an effort to clarify answers (e.g., the number of sexual partners) and only the confirmed number was used in the analysis.

*Sexually transmitted infection* was defined as any positive results from the laboratory tests for chlamydia, gonorrhea, syphilis, trichomonas, herpes or HIV. Chlamydia and gonorrhea were tested using polymerase chain reaction. The MRL Diagnostics HSV-2 IgG test was used to identify specimens with positive HSV-2 antibody. HIV testing was performed using EIA or ELISA and repeated with another EIA/ELISA. Positives were confirmed using Western blot analysis. Syphilis testing was performed by rapid plasma reagin and confirmed using the *Treponema pallidum* particle agglutination test. Vaginal swabs were cultured for *Trichomonas vaginalis* using the InPouch TV test.

### Data Analysis

All statistical analyses were performed using SAS 9.2 statistical software package (SAS Institute Inc., Cary, NC). First, chi-square ($\chi^2$) was used to test the gender difference in responses to the five statements measuring normative beliefs about multiple sexual partners. Multiple linear regression analyses were performed to examine the effects of socio-demographic variables and multiple sexual partners on the normative belief measure. After performing a multivariate logistic regression analysis on the multiple sexual partners by controlling for socio-demographic and normative beliefs variables, we conducted further analyses on STI to examine associations between normative beliefs, multiple sexual partners, and STI, adjusting for socio-demographic factors. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated and reported.

## Results

### Characteristics of the Study Sample

The study sample consisted of 3,716 participants, 44.5% of which were men. Among all participants, the average age was about 37 years old. The majority of the sample (86.4%) was married or living as married at the time of the assessment, and 53.4% had an education level of junior high school or higher. About 46% of the respondents reported having discretionary money of 400 yuan (US$60) per month or more.

### Normative Beliefs About Multiple Sexual Partners by Gender

Table 1 presents gender differences in normative beliefs about multiple sexual partners and social status. For all five statements about respondents' perceptions of people in their community considering having multiple sexual partners as a sign of high social status, men reported higher levels of agreement than their women counterparts. For example, when asked about a "second wife" as a sign of high social status for men, 9.8% of male respondents either strongly agreed or agreed with the statement, compared to 3.6% of women in the sample. We found women were more likely to report "not sure" for each of the statements, as men were more likely to express their opinions, either agreement or disagreement, about how people in their community think about multiple sexual partners and social status.

Gender differences were observed not only in the responses to each statement, but also in relation to the subject of the statements. For instance, about 6.5% of men and 2.7% of women agreed that people in their community believe that having multiple sexual partners is a sign of high social status for men. When asked the same statement about women, only 3% of men and 1.4% of women agreed with the statement. Similar patterns also occurred in statements about having a "second wife" as a sign of high social status for men or having a "second husband" as a sign of high social status for women.

**Table 1** Normative beliefs about multiple sexual partners and social status by gender ($N = 3,716$)

| People in my community believe… | Agree (%) | | | Not sure (%) | | | Disagree (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| 1. Asking for "girls" in an entertainment is a sign of high social status. | 7.0 (115) | 3.6 (74) | 5.1 (189) | 46.2 (763) | 54.4 (1,122) | 50.7 (1,885) | 46.9 (774) | 42.1 (868) | 44.2 (1,642) |
| 2. Having a "second wife" is a sign of high social status for men.[a] | 9.8 (162) | 3.6 (74) | 6.4 (236) | 44.0 (726) | 53.3 (1,100) | 49.1 (1,826) | 46.2 (764) | 43.1 (890) | 44.5 (1,654) |
| 3. Having multiple sexual partners is a sign of high social status for men. | 6.5 (108) | 2.7 (56) | 4.4 (164) | 43.3 (715) | 53.1 (1,095) | 48.7 (1,810) | 50.2 (829) | 44.2 (913) | 46.9 (1,742) |
| 4. Having a "second husband" is a sign of high social status for women. | 4.1(67) | 1.6(32) | 2.7 (99) | 40.5 (669) | 52.6 (1,085) | 47.2 (1,754) | 55.5 (916) | 45.9 (947) | 50.1 (1,863) |
| 5. Having multiple sexual partners is a sign of high social status for women. | 3.0 (49) | 1.4 (28) | 2.1 (77) | 38.6 (638) | 52.4 (1,081) | 46.3 (1,719) | 58.4 (965) | 46.3 (955) | 51.6 (1,920) |

[a] Significant differences were found between male and female ($P < 0.05$)

## Factors Related to the Normative Beliefs About Multiple Sexual Partners

Results from multiple linear regression analysis of normative beliefs with socio-demographics and multiple sexual partners are summarized in Table 2. First, five socio-demographic variables were included in model 1 in predicting the normative beliefs measure. Age was positively associated with increased normative beliefs about multiple sexual partners and social status ($b = 0.023$; $P \leq 0.0010$). The older respondents were more likely to agree that having multiple sexual partners is regarded as a sign of high social status in the community than younger respondents. Education was significantly negatively associated the normative beliefs measure ($b = –0.326$; $P \leq 0.0015$). A lower education level was related to a higher level of normative beliefs measured in the study.

To further examine how having multiple sexual partners and socio-demographic factors were associated with the normal beliefs measure simultaneously, we added multiple sexual partners to model 2 (Table 2). Respondents who reported having two or more sexual partners in the past 6 months were more likely to report the normative beliefs about multiple sexual partners linked to social status ($b = 0.398$; $P \leq 0.0484$), while demographic factors were held constant in the model. Age and education remained significant associations with the normative beliefs measure ($P \leq 0.0018$ and $P \leq 0.0022$, respectively) after the multiple sexual partners variable was added to the model. Gender was found to be significantly associated with the normative beliefs ($b = –0.250$; $P \leq 0.0184$). Women had a higher level on the normative beliefs scale than men, which was inconsistent to the bivariate analysis.

## STI, Multiple Sexual Partners, and Normative Beliefs

Relationships among STIs, risky sexual behaviors, and normative beliefs are illustrated in Table 3. In predicting self-reported multiple sexual partners, multivariate logistic regression revealed that age, gender, and discretionary money were significantly associated with having multiple sexual partners. Those respondents who were male ($P \leq 0.0001$), younger ($P \leq 0.0001$), or had more discretionary money ($P \leq 0.0001$) were significantly related to

**Table 2** Multiple linear regression of normative beliefs with demographic and sexual risk variables

| Independent variable | Normative beliefs model 1 | | Normative beliefs model 2 | |
|---|---|---|---|---|
| | Parameter estimate | *P* value | Parameter estimate | *P* value |
| Age | 0.023 | 0.0010 | 0.023 | 0.0018 |
| Gender (male) | −0.174 | 0.0779 | −0.250 | 0.0184 |
| Discretionary money (≥400 yuan/month) | 0.007 | 0.9422 | −0.044 | 0.6639 |
| Education (≥junior high school) | −0.326 | 0.0015 | −0.321 | 0.0022 |
| Married or living as married | −0.138 | 0.4083 | −0.203 | 0.3002 |
| Having multiple sexual partners | | | 0.398 | 0.0484 |

**Table 3** Multivariate logistic regression examining factors related to multiple sexual partners and sexually transmitted infections, controlling demographics, normative beliefs, and sexual risk

| | Having multiple sexual partners | | Sexually transmitted infection | | | |
|---|---|---|---|---|---|---|
| | | | Model 1 | | Model 2 | |
| Independent variable | Odds ratio (95% CI) | *P* value | Odds ratio (95% CI) | *P* value | Odds ratio (95% CI) | *P* value |
| Age (year) | 0.94 (0.92–0.96) | <0.0001 | 1.00 (0.99–1.02) | 0.6263 | 1.00 (0.99–1.02) | 0.7436 |
| Gender (male) | 40.00 (19.58–81.69) | <0.0001 | 0.59 (0.48–0.73) | <0.0001 | 0.51 (0.41–0.65) | <0.0001 |
| Discretionary money (≥400 yuan/month) | 2.35 (1.74–3.18) | <0.0001 | 1.40 (1.15–1.71) | 0.0009 | 1.34 (1.10–1.65) | 0.0053 |
| Education (≥junior high school) | 0.95 (0.70–1.31) | 0.7643 | 0.84 (0.70–1.03) | 0.0917 | 0.90 (0.72–1.11) | 0.3135 |
| Married/as married | 0.96 (0.63–1.46) | 0.8559 | 1.12 (0.78–1.60) | 0.5488 | 0.94 (0.62–1.40) | 0.7491 |
| Normative beliefs | 1.06 (1.01–1.11) | 0.0273 | 1.03 (1.00–1.07) | 0.0828 | 1.02 (0.99–1.06) | 0.1751 |
| Having multiple sex partners | | | | | 1.90 (1.28–2.80) | 0.0013 |

the report of having multiple sexual partners in the past 6 months. Men were 40 times more likely than women to report having multiple sexual partners, and the report of having multiple sexual partners was about 2.5 times higher for people having discretionary money of 400 yuan or more per month than those with less discretionary money to spend. It is important to note that the measure of normative beliefs about multiple sexual partners was significantly associated with the behavioral indicators of having two or more sexual partners in the past 6 months ($P \leq 0.0273$).

In the regression analysis of STI infection, the measure of normative beliefs was not significantly related to STIs, controlling for socio-demographic variables. After adding having multiple sexual partners to the analysis in model 3, we found that having multiple sexual partners was significantly related to STI—those who reported having multiple sexual partners increased the odds of STI, almost two times more than those who reported having one or zero sexual partners in the past 6 months ($P \leq 0.0013$). Consistent with previous studies [9, 48], women were more likely than men to be associated with having STIs, after controlling variables of demographics, normative beliefs, and multiple sexual partners. Also, respondents who reported having discretionary money of 400 yuan or more per month were more likely to be associated with STIs than those with less discretionary money.

## Discussion

Having multiple sexual partners is associated with beliefs that multiple partners reflect heightened social status in China. These beliefs are also associated with individual sexual behavior risks. Market vendors with normative beliefs about the link between multiple sexual partners and social status were more likely to have multiple sexual partners. This finding is consistent with previous reports about normative beliefs and risk behaviors [35, 37, 50]. Given that our study used a cross-sectional research design, we cannot make an arbitrary conclusion that the normative beliefs factor was the cause for multiple sexual partners. It is possible that respondents' normative beliefs about multiple sexual partners are influenced by their personal behaviors. The findings, however, provide support for the hypothesis, based on the theory of diffusion of innovations [29], that normative beliefs concerning a particular behavior could be one of the primary determinants of the behavioral manifestation. In China, perceived approval of having multiple sexual partners and its relation to higher social status in society appears to influence individual risky attitudes and behaviors. Thus, shifting a community's social norms regarding sources of status could be an effective intervention to reduce sexual risk.

We also found that having multiple sexual partners was significantly associated with STIs, a finding confirmed in other countries [10, 49, 50]. However, the normative beliefs were not a significant predictor of STIs after controlling for both socio-demographics and multiple sexual partners. One possible explanation could be that normative beliefs have no direct effects on STIs, but it could affect STIs indirectly through its influences on personal behavior of having multiple sexual partners. Alternatively, some unknown risk factors for STIs not attributed to multiple sexual partners might not be adjusted for in the analysis, and therefore it could confound the effect of normative beliefs on STIs in our study.

This study highlights the role of gender in understanding normative beliefs about multiple sexual partners in China and its relationship with sexual risk behavior. Clearly, both male and female participants were likely to believe that having multiple sexual partners is a sign of high social status more for men than for women. The differences reflected a double standard in male-dominated societies, where female sexuality is more tightly controlled. Under the patriarchal Confucian tradition, Chinese women were

the property of men and had few rights—the traditional family structure reinforced women's marginal status because it was primarily organized around male authority [51].

The status of women underwent great change during the 20th century. Some recent studies in China reported that there has been an increase in women who have multiple sexual partners or engage in risky sexual behaviors [12, 52]. In his study on China's sexual revolution, Pan [14] acknowledged the changing attitudes of Chinese women towards sex and further pointed out that, contrary to the perceptions of increased equality, many traditional and gendered assumptions about women's sexual behaviors remain unchanged. Gender stereotypes often encourage Chinese women to be passive about sex and men to take more risks and assume a controlling role in relationships [53].

Gender differences were also observed in light of ambivalent reports on social norms about multiple sexual partners by women, compared to that from men. In this study, women tended to choose "not sure" when asked how other people in their community thought about multiple sexual partners and social status (men were more likely to express their opinions as either "agree" or "disagree"). This can also be understood by the existing gender gap, which led to hesitation in answering questions about sexual behaviors by women in our study. Furthermore, gender socialization theory suggests that women are conditioned from an early age to reason differently from men concerning moral issues and are more prone to the influence of societal norms and values; this tendency was reported to be associated with a higher social desirability bias in women than men [54]. In this study, there is reason to speculate that social desirability bias played a role in the "not sure" responses, especially for women.

Having multiple sexual partners was significantly associated with higher economic status in this study (measured by more discretionary income). This result was consistent with the findings from previous studies that people earning a high income were more likely to engage in risky sexual behaviors, including commercial sex [4, 9, 16, 48]. With the rapid economic development that has occurred in China over the past three decades, behavioral norms have changed, including consumption and leisure activity patterns. The marketplace provides opportunities to buy virtually anything for people with higher incomes, and being able to do so becomes a symbol of success. As discretionary money becomes more available to be drawn into the world of entertainment, risk behaviors associated with commercial sex and having multiple sexual partners also become inevitable [55]. The "second wife" phenomenon in China is considered a part of the sexual revolution in China. Having a "second wife" or "second husband" costs money, and there is no doubt that financial stability plays a role. The rich can afford having more sexual partners, and therefore their risks for unprotected sex and STIs may also increase accordingly.

The generalization of our findings is affected by several limitations. First, the study's cross-sectional design was limited in evaluating cause-and-effect associations. Second, our results cannot be generalized to all Chinese people, as the sample was limited to only one geographic region of China and with only market vendors. Finally, since having multiple sexual partners was self-reported, the possible bias introduced by under-reporting must be noted.

Nevertheless, this study provides multiple implications for future HIV/STI prevention programs. First, intervention developers should not ignore the social norm component and its relationships to individual behaviors. It is commonly believed that a behavior is more under attitudinal than normative control. Under circumstances in which people identify strongly with their own group, community, or society, norms may have a stronger influence. In a separate study in China, we compared service providers' perception of social norms and their personal opinions regarding people living with HIV/AIDS and found that reported personal attitudes matched their perceived social norms [56]. Individuals are a part of a society, and their perception of social norms is built on their interpretations of observations in their personal communities; therefore, their reports on normative beliefs may result from a blend of social reality and personal interpretation. The current findings imply that in order for a risk reduction intervention to be effective, it needs also to intervene on a normative level to make sure that group norms are consistent with the direction of the intervention.

This study underscores the importance to address gender issues in future HIV/STI reduction/prevention interventions. Women's sexual behavior has become increasingly important in China, in light of the situation that heterosexual transmission of HIV/STI is growing. To reach women as a main force for STIs prevention and intervention, we need to address gender norms and social taboos about discussing sex, and their associations to women's vulnerability to STIs and HIV transmissions. In future gender-sensitive prevention programs, we should promote mutually respectful and equitable gender relations, and empower women to avoid high-risk behaviors, expand behavioral options for self-protection, and improve access to healthcare and resources that may ultimately reduce their vulnerability to risky behaviors and conditions which cause the spread of sexually transmitted diseases, including HIV.

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